Attorney's Docket No. 018360-254508 PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re: Zhong, et al. Confirmation No.: 9710
Appl. No.: 10/647,062 Art Unit: 3661
Filed: August 22, 2003 Examiner: Donnelly, Arthur D.
For: CORE AREA TERRITORY PLANNING FOR OPTIMIZING DRIVER FAMILIARITY AND ROUTE FLEXIBILITY

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**DECLARATION**

Sir:

I, Hongsheng Zhong, do hereby declare and aver the following:

1. I am a co-inventor of the above identified patent application and a full-time employee of United Parcel Service General Services Co. ("UPS") which is a corporate entity related to the assignee of the present invention.
2. My education level includes receiving a Ph.D. from the University of Southern California ("USC") in 2001, in the area of industrial engineering. As part of the requirements of the degree, I presented a Ph.D. dissertation to a faculty committee at USC on August 22, 2001, which was entitled "Territory Planning and Vehicle Dispatching With Stochastic Customers and Demand."
3. During the summer of 1999, I was enrolled as a Ph.D. student at USC and registered for a "Directed Research" course at USC. However, during the summer of 1999, I was not attending classes on campus but was residing in Timonium Maryland, and employed by UPS in Timonium, Maryland as an 'cooperative' employee (e.g. a temporary full time employee working to receive academic credit). My duties at UPS were to work on a single package car routing problem with UPS' pickup and delivery operations. It was at this time that I initially conceived of the concepts that would be the basis of my Ph.D. proposal.

4. Around August of 1999, I returned to the campus at U.S.C. and was no longer employed by UPS. I began drafting my Ph.D. proposal and in November of 1999, I submitted my Ph.D. proposal to my faculty advisor, Professor Randolph Hall.

5. During fall and winter of 1999, I received monies in the form of cash and tuition waivers from a National Science Foundation ("NSF") grant administered by Professor Hall. Upon information and belief, this grant corresponds to that described in an Abstract for 97-32878, a copy of which I understand is being provided in an accompanying information disclosure statement. The monies received were compensation for work performed under the supervision of Professor Hall. This work was performing research associated with the above mentioned NSF grant.

6. Around early May of 2000, I returned to UPS in Maryland as a cooperative employee and worked with various individuals, one of whom was Mr. David Zaret, who is the other co-inventor of the present application. After I left USC campus in May of 2000, I did not work any further for Professor Hall in conjunction with the NSF grant and did not receive any further money from the NSF grant, either directly or in the form of tuition waivers.

7. While working full time for UPS in Maryland from about May, 2000 up through August 22, 2001, I was still enrolled at USC and continued working on my Ph.D. dissertation as well as working on further routing concepts for UPS based on my Ph.D. dissertation. Around January of 2002, I became a UPS permanent employee.

8. On August 22, 2001, I presented my completed Ph.D. dissertation to the faculty of the graduate school of USC, which included Professor Hall.

9. The research conducted for my Ph.D. dissertation was not based on real-time routing of vehicles. Evidence of this may be found in my Ph.D. dissertation, which I understand a copy was attached to the provisional patent application (in Application No. 60/405,138, filed Aug. 22, 2002). Specifically, page 8 of the dissertation states:

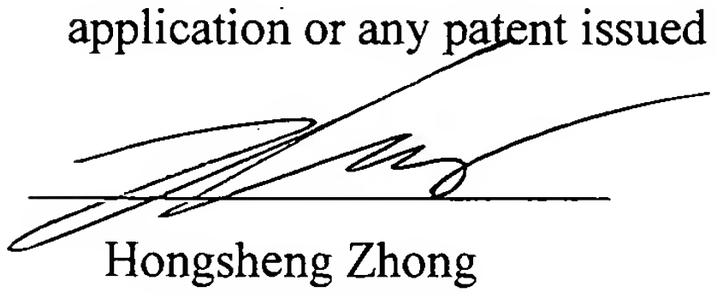
> For simplicity, we make the following assumptions in our initial research:
> 1) Customers and demand are revealed before the dispatching for that day.
> 2) Time windows for all customers are the same. In future, variable time windows will be considered.

The research work performed for my Ph.D. dissertation presumed that the number of customers and demand for each customer are known before determining a dispatch route.

10. The research conducted for my Ph.D. dissertation was not based on accommodating service windows for specific customers. My research assumed that "[t]ime windows for all customers are the same." The sentence indicating that variable time windows will be considered in the future was stated as a potential future topic of research, not within the scope of the present Ph.D. dissertation. This is explicitly clarified in the dissertation, Section 7.2 , "Future Research" (page 160).

11. During the same time period from about May, 2000 through August 22, 2001, I was also working on additional concepts related to my Ph.D. dissertation for UPS, but which were not within the disclosure of my original Ph.D. proposal and which were not disclosed in the completed Ph.D. dissertation. One such concept is the "grid method for measuring route consistency." This concept is disclosed in section 6.1.1 (page 32) of the non-provisional patent specification of the present invention. This concept was developed either shortly before, or after, the presentation of my Ph.D. in August of 2001. This concept involves mapping a plurality of cells to a grid and then ascertaining a driver frequency value for each grid during a reference time period associated with each assigned driver. This inventive concept is manifested in the present independent claims 1 and 31 via the limitation "establishing a minimum grid segment visiting frequency limit."

12. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Hongsheng Zhong

3/2/07

Date